

## International System and Intra-National Tensions

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### Framework

Many attempts have been made to relate intra-national tensions to international conflicts; this is what Kenneth Waltz calls the "second image" in international relations<sup>1</sup>. It is also possible to conceive a causal relationship pointing in the opposite direction, namely that the international system determines intra-

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<sup>1</sup> Waltz, Kenneth N., *Man, the State, and War - A Theoretical Analysis*, New York 1959.

national tensions and processes<sup>2</sup>. The process of development of the contemporary nation-states is conceived as a process of mobility of these nations through the mobility channels of the international stratification system<sup>3</sup>. The issue of development only appears when the international set of nations becomes an actual system based on a certain level of interaction and the sharing of a set of values. If such an interaction and relative agreement on values occur, we can apply to international relations the same kind of reasoning we use for the study of stratified societies at the intra-national level.

The main point is that the nation-states are ranked according to a shared set of values and aspirations. The distribution of values is differential and may have specific, systematic and predictable consequences for the country's internal processes, for the patterns of interaction between units and for the dynamics of the international system as a whole. This parallels the theoretical and empirical implications of the stratification of persons in the national system<sup>4</sup>. There are three basic values to which the nation-states aspire<sup>5</sup>, and which define the contemporary system of stratification of nations. These values are *development*, *modernization*, and *power*. An index of international stratification we made for the Latin American countries, combining these three dimensions<sup>6</sup>, provided a rank-order of countries that correlated with other independent measures of stratification,<sup>7</sup> as well as with the subjective ranking of countries made by a sample of students we used for the study of the images of international stratification<sup>8</sup>.

This study has shown that, although the stratification image of the respondents was heavily influenced by the factor power (measured by size, population or Gross National Product), at the level of values the respondents explicitly refused to consider this dimension as relevant for their own perception of stratification. (See also R. Levy and W. Obrecht, *Operationalizations of the Concept of Power*). This finding relates to the fact that the power dimension is the most ascriptive one in the contemporary international system that is perceived through the lenses of an equalitarian ideology based on achievement.

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<sup>2</sup> This is the research line followed by the Soziologisches Institut, University of Zurich, and by the Bariloche Foundation, Argentina, both under the direction of Peter Heintz. The most direct antecedent of this paper are Mora y Araujo, Manuel, "Structural Tension, Political stability and Economic Development," Bulletin 4, 1967, pp.80-101; Schwartzman, Simon, Mora y Araujo, Manuel, A "Project on Social Tension and Development," Bulletin No.3, 1967, pp.56-99.

<sup>3</sup> The main work of Peter Heintz on this line is *Ein Soziologisches Paradigma der Entwicklung*, Stuttgart 1969, and his papers in the Bulletin of the Soziologisches Institut der Universität Zürich.

<sup>4</sup> This parallel between national and international systems of stratification is briefly discussed in the introduction to Schwartzman and Mora y Araujo, "The Images of International Stratification in Latin America," *Journal of Peace Research* 3, 1966, pp.225-243.

<sup>5</sup> A problem of linkage exists here: who, exactly, aspires to these values? Without attempting to solve this problem, we may say that the idea that these aspirations exist holds both for sizable parts of national populations and for governments.

<sup>6</sup> See Galtung, Johan, Mora y Araujo, Manuel, and Schwartzman, Simon, "El Sistema Latinoamericano de Naciones - un análisis estructural," *América Latina*, Rio de Janeiro, 9, 1, 1966.

<sup>7</sup> It correlates highly with David Singer's ordering of the international system, using a sociometric technique. See Singer, David, "The Composition and Status Ordering of the International System," *World Politics*, 1966, pp.236-282.

<sup>8</sup> See Schwartzman, Simon and Mora y Araujo, op. cit.

The problems of development are seldom discussed in terms of increasing national power, except when an international revolutionary ideology is present.

The distinction between these two aspects of the international system, ascribed and accessible, leads to a conceptualization of the international stratification system as a class-like system in which access to high ranks is considered as legitimate but is not effective<sup>9</sup>. This contradiction increases with the degree of prismaticity of the system. Ascribed and accessible rank-dimensions can be distinguished either by isolating power from the dimensions of modernization and development, or between these two, leaving the power dimension aside. This will be done in the following, not because the dimension of power is not relevant, but because its place in the context of this analysis is not central.<sup>10</sup>

The distinction between "development" and "modernization" emerges as a source of status inconsistency for countries<sup>11</sup>.

The contemporary international system is passing through a stage characterized by the legitimacy of upward mobility and the difficulties of achieving it. A country is located on a lower rank of the system either as a consequence of a previous process of losing status (atimia)<sup>12</sup> or as a consequence of the incorporation of values of mobility into an otherwise traditional setting. To the extent that a country, or a substantial part of its population, is experiencing such a situation, we define it as "underdeveloped". Underdevelopment, then, from a sociological point of view, is the ratio between a given level of aspirations and the country's capacity of satisfying them. At present, the level of aspirations is determined by the dominant standards of living of the developed countries in the international system, which often are similar to the standards of living of the most modern sectors of under-developed countries. Underdevelopment refers to a situation that is very different from the process of industrialization and modernization of the already developed countries, which have been the leaders of the international system since the beginning of modern times. As in the case of the international system, we define the internal stratification in a narrow and precise sense as the distribution of individuals on socially relevant rank dimensions<sup>13</sup>. Thus, there are as many stratification dimensions as there are socially accepted values.

According to this definition, the more the population of a country has access to high ranks - as defined by the leading standards in the international system - the more this country is developed. We propose to use

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<sup>9</sup> See Schwartzman and Mora y Araujo, op. cit.

<sup>10</sup> The concept of power is obviously crucial for the prediction of patterns of the external behavior of countries. In our case, however, we are mainly concerned with the consequences of the international system for internal processes in terms of the variables through which some access is possible.

<sup>11</sup> See Galtung, Johan, "Rank and Social Integration. - A Multidimensional Approach," in Berger, Zelditch, and Anderson (eds.), *Sociological Theories in Progress*, Boston 1966.

<sup>12</sup> A concept developed by Lagos, Gustavo, *International Stratification and Underdeveloped Countries*, Chapel Hill, 1963. For an operational use of this concept see Kartzman, Rubén, "Educational Stratification in Argentina Provinces," *Bulletin*.4, 1967, pp.145

<sup>13</sup> See Galtung, Johan, op. cit.

the word "modernization" to characterize the type of mobility referring to rank-dimensions, and to use the term "development" in a more restricted sense. We define development as the process that D. Apter describes as "the proliferation and integration of functional roles in a community", or, in more general terms, as "the process by which secular norms of conduct are universalized"<sup>14</sup>. Modernization, then, refers to changes in a system of rank-dimensions, whereas development, in this restricted sense, refers to a system of role-sets.

Stratification as a system of rank-dimension is, then, a matter of allocation according to different levels of participation in socially accepted values. This is a "consumatory" dimension of stratification in the sense of a system of rank-positions that are evaluated independently of their function and purpose. The other concept of stratification is basically "instrumental"<sup>15</sup>. Social status, here, has the meaning of a social role-set and defines the position the unit occupies in the social division of labor. Social systems can be ranked in terms of the degree to which their resources are instrumental. This ranking is called development.

We are interested in the study of the leads and lags between modernization and development within the contemporary system of inter-national stratification. One can look at the stratified structures of the national units and ask, as Apter does, which kinds of stratification - in terms of the relationship between modernization and development - are functions of the relative position of the units in the overall process of international mobility<sup>16</sup>. Or one can remain on the level of the inter-national system and see whether the systematic impact we expect it to have upon the national units, really occurs. We shall follow here the second line of analysis

### **Structural Tensions**

The idea of leads and lags in a process of change is, of course, not a new one in the field of development. Antônio Octávio Cintra<sup>17</sup> gives a summary of different instances in the literature: Gino Germani refers to the concepts of "institutional asynchronism"<sup>18</sup>. G. A. D. Soares analyzes the gap between social and economic development<sup>19</sup>, Karl Deutsch emphasizes the problem of maladjustments between variables that

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<sup>14</sup> See Apter, David, *The Politics of Modernization*. Chicago University Press 1965, pp.67-68.

<sup>15</sup> Not in the sense used by Apter, "consumatory" and "instrumental" do not indicate here alternatives in value orientations but aspects of the social structure.

<sup>16</sup> Apter, David, *Notes for a Theory of Non-Democratic Representation* (mimeo) 1967.

<sup>17</sup> Cintra, Antônio O., *Educational System and Political Protest: Exploratory Study of a Hypothesis*, MIT (unpublished paper), January 1968.

<sup>18</sup> Germani, G., *Política y Sociedad en una Epoca de Transición*, Buenos Aires 1962.

<sup>19</sup> Soares, G. A. D., "Desarrollo Económico y Radicalismo Político", in: J. A. Kahl (ed.), *La Industrialización en América Latina*, Mexico 1965.

indicate demands upon the governments and the governments' capability for coping with these demands<sup>20</sup>. This list is not exhaustive<sup>21</sup>.

What is particularly new in Peter Heintz's concept of "structural tension" is, first, its inclusion into a general theory of international stratification, and, second, his attempts to operationalize its different aspects<sup>22</sup>. "Structural tensions", in this context, are defined as discrepancies between rank-positions of the nations in the international system. The rank-dimensions which are relevant in the international system are limited in number, and some systematic work has been done on the relationship between income, education, urbanization and the broadening of the social structure. According to our previous discussion, we consider the level of income as an indicator of *development* and urbanization and education as dimensions of *modernization*<sup>23</sup>.

Another indicator of modernization refers to the broadening of the social structure measured by the relative size of the middle and upper stratum. Another measure of development, perhaps less problematic than per-capita income, is energy consumption per capita. Education is measured by overall participation (literacy) and by the higher level of formal schooling.

The main general propositions about the relationship between instrumental development, or development properly speaking, and consumatory development, or modernization, can be stated as follows:

- 1) Countries develop along the lines of consumatory dimensions, and the creation of instrumental systems capable of providing resources for modern life tends, in general, to lag behind<sup>24</sup>.

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<sup>20</sup> . Deutsch, K., "Social Mobilization and Political Development," in: Finkle and Gable (eds.), *Political Development and Social Change*, New York 1966.

<sup>21</sup> For instance Kornhauser, W., *The Politics of Mass Society*, New York, 1966; Smelser, N. J., "Mechanisms of Change and Adjustment to Change," in: Finkle and Gable (eds.), *Political Development and Social Change*, New York 1966; Eisenstadt, S. N., "Breakdowns of Modernization," *Economic Development and Cultural Change*, 12, July 1964, and Huntington, S.P., "Political Development and Political Decay," *World Politics* 17, 3, 1965.

<sup>22</sup> An important aspect of this theoretical innovation is that it allows the analysis to remain at the structural level without having to rely on explanations based on psychological mechanisms. Of course, this does not mean that the psychological assumptions can be totally avoided, but simply that they can remain as general assumptions which serve as parameters to the analysis. For an explicit statement in favor of the reduction of this kind of analysis to the socio-psychological level, see Passos, Alaôr S., "Developmental Tension and Political Stability," *Journal of Peace Research*, 1, Oslo 1968, p.75. Our contention is that assumptions like "disequilibrium produced in the configuration of societal status determines the appearance of similar disequilibria in the configuration of individual status sets" is not only unnecessary but also leads to hard problems concerning the ecological fallacy.

<sup>23</sup> We should notice that, what for a country internally is instrumental development, may be considered as consumatory from an "external" point of view. The level of income of a country can be understood from two different points of view. From one point of view it tells us about the level of technological development and rationalization of the country's economy, or, more generally, about "the proliferation and integration of functional roles" in Apter's terms. From the other it represents, in terms of the social position of a country in the structure of inter-national stratification, an element of international prestige. Here the meaning is consumatory.

<sup>24</sup> There are two remarkable exceptions. The capitalist countries are supposed to have developed thanks to the ideals of a puritanic asceticism which despises the values of consumption. The other exception refers to the contemporary socialist states, mainly to the Soviet Union; they also developed through a process of restriction of consumption. These exceptions are, however, consistent with our generalization with respect to at least two points. First, our statement refers to the contemporary societies which share the values of consumption; these values did not exist on an

- 2) Given the characteristics of the international system today, with its facilities for the transfer of capital and know-how, development along consumatory lines can be pushed relatively far without creating corresponding instrumental systems. However, there is a limit to this process of modernization, a ceiling above which a policy of development along instrumental lines is required.
- 3) Up to this ceiling, development along the lines of modernization is a consequence of the relatively high accessibility of this dimension of international stratification. Thus, modernization is the independent variable in the explanation of the social process of nation-states during a "pre-ceiling" phase.
- 4) Going beyond this ceiling implies a change in the productive structure of society. This has a direct impact on the political level and on the national distribution of consumption goods. This change is not always possible, and if it does not occur, mechanisms which restrict modernization appear, either in the form of international isolation or as repression of social mobility and mobilization or as "apartheid" (neo-feudal) types of social controls or some combination of these.

These general propositions refer to the process of development and to specific political crises that can be expected at certain stratification levels<sup>25</sup>.

Development along consumatory lines may create privileged groups that are not willing to promote structural changes that could affect the distribution of the benefits of modernization. At the same time, this type of development increases the levels of expectations of the whole population, and the discrepancy between a high level of aspirations and a low level of satisfaction is bound to create social instability<sup>26</sup>. Various hypotheses have been formulated about the combination of these elements. Mora y Araujo found, for instance, that a lead of education over income predicts growth of income in situations of political stability<sup>27</sup>. Kaztman showed how the development of education along consumatory lines is a factor that absorbs tensions and leads to conservative political attitudes<sup>28</sup>. A. Passos<sup>29</sup> found that in Latin America, structural tensions combined with a relatively closed social structure are related to military expenditures and political instability (see also E. Archetti and P. Heintz, *Anti-Status Quo Conflicts in Latin America*).

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international scale two decades ago. second, both cases are instances of situations where an elite succeeded in constraining the aspirations of large sectors of the population through exploitation, isolation, and oppression.

<sup>25</sup> There is a constant mixture, in these kinds of studies, of the idea of a position in a process of development and a position in a structure of stratification. strictly speaking, we are only dealing with synchronic data, and any identification of levels of development with stages in a process of change is fallacious.

<sup>26</sup> See Feierabend, Rosalind, and Feierabend, I. K., *Aggressive Behavior within Politics, 1948-62. Cross-National Data*, paper delivered at the Annual Meeting of the Western Political Science Association, March 1966.

<sup>27</sup> See Mora y Araujo, Manuel, *Structural Tension, Political Stability, and Economic Development*, op. cit.

<sup>28</sup> See Kaztman, Ruben, *Educational Stratification in Argentina Provinces*, op. cit.

<sup>29</sup> See Passos, Alaôr S. , op. cit.

One of the weaknesses of many of these studies has been the rather limited validation of the meaning that measures of structural tensions were supposed to have<sup>30</sup>.

The main purpose of this paper is to present an operationalization of structural tensions and some measures and conceptualizations of social tensions and to show the relationship between them

### **Social Tensions: A Factor Analysis**

If structural tensions as defined above are more than empty constructs they must have specific correlates among observable social phenomena. If different types of structural tensions lead to different types of stress, the logical procedure would be to detect operational indicators of these stresses in the form of social tensions.

Our indicators of social tensions were taken from the "Cross-National Data Bank of Political Instability Events" of Ivo K. and Rosalind K. Feierabend<sup>31</sup>. This bank consists of almost five thousand observations in 84 countries, taken mainly from the New York Times Index, from 1948 to 1962. These observations are grouped in 30 categories that the authors used for a factor analysis included in their article on "Aggressive Behavior within Politics"<sup>32</sup>. The authors also placed their items on a reputational scale of instability that is correlated with their measures of "systemic frustration". Our use of these data implied two steps. First, we repeated the factor analysis, with different solutions, in order to get a better understanding of the data. Second, factor scores derived from this analysis were used for testing the relationships between structural and social tensions. The factor analysis was done using the FA 80 routine developed by Alan B. Wilson for the DCS system of the University of California, Berkeley. This program offers a variety of solutions. Factor analysis is a technique for extracting hypothetical factors that can explain a given portion of the variance of the matrix of inter-correlations among variables. A correlation is "explained" if it disappears when the factor is introduced as a third variable. Factor analysis deals with sets of variables and extracts factors that simultaneously and partially explain a high number of interrelations. It is always possible to construct different sets of factors that explain the matrix of correlations in different ways. These different sets of factors are the different "solutions" which the same set of data yields<sup>33</sup> (see the full factor matrices at the Annex).

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<sup>30</sup> See the discussion on this problem in the concluding section of this paper.

<sup>31</sup> The code index for this bank, as well as the data themselves, are available through the Public Affairs Research Institute, San Diego State College. We used for our analysis the data in the International Data Library and Reference Service, Survey Research Center, University of California at Berkeley.

<sup>32</sup> Feierabend, Rosalind, and Feierabend, Ivo K., *Aggressive Behavior within Politics, 1948-62*, op. cit.

<sup>33</sup> Our replication of the Feierabend's factor analysis did not yield the same result as theirs, and since we did not have access to the details of their procedure it was impossible to locate the source of differences. One possible source of differences is the criterion for filling in the main diagonal of the inter-correlation matrix. Both, Rummel and Tanter, put 1 in the diagonal. We preferred to work with squared multiple correlations because we assumed that this would be more congenial to the reliability of our data.

1) *Principal Components Solution*: "Principal components" is a solution that extracts the maximum variance of the matrix of inter-correlations for each successive factor; or, in other words, successive factors account for the maximum possible of the remaining variance in the matrix. In our case, the first factor accounted for 35% of the total variance, the first two factors for 50% of the total matrix. Of the nine factors extracted, only five had loadings above 0.40. Factor I is an overall dimension of "turmoil" or unrest which has been found both by Tanter and by Rummel in their analyzes of aggressive behavior between and within nations<sup>34</sup>. Factor II represents a dimension of conflict concerning political power among elite groups without any participation of significant sectors of the population; Feierabend calls it "palace revolution". Factor III is a factor of organized conflict between government and large sectors of the population - a factor of class conflict, presumably. Factor IV represents "pure" repression without political mobilization. We have here phenomena of repression that are likely to occur in situations where the government is strong and the organization of the population is weak (countries with high scores on this factor are Syria, Iraq, and Pakistan). Factor VI, finally, is a factor of opposition going from a pacific to a violent extreme.

2) *Varimax Orthogonal Rotation*. The object of the orthogonal rotation is to find factors that are independent, i.e. orthogonally related to each other. The varimax type of rotation tries to maximize high and low loadings. The factor structure obtained is somewhat different from the pattern presented by Feierabend:

- *Factor I - Riots*: outbursts neither of violence that do not fall either in the group of organized conflict nor in the one of direct political confrontation. Feierabend's Factor I, "mass-participation. turmoil", includes elements of organized conflict and terrorism. Our factor includes "riots" together with "demonstrations".
- *Factor II - Coup d'État*: conflicts concerning political power among elite groups without any participation of major sectors of the population. More specifically, *coup d'état* seems to cover manifestations of military take-over.
- *Factor III - Change of Government*: a dimension of governmental turnover. Feierabend's Factor III, "power struggle -purge", includes items of repression.
- *Factor IV - Protests*: The combination of micro-demonstrations and arrests indicates the presence of *organized political manifestations of small groups*, a factor that partially includes demonstrations of a larger size. It corresponds to Feierabend's Factor VI, "demonstration".
- *Factor V -Organized Conflict*: in contrast to Factor 1, the combination of general strikes and sabotage suggests a *high level of organization* in a situation of *social mobilization*; "collective anomie", a concept suggested by Peter Heintz, may characterize this factor. The meaning of the

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<sup>34</sup> Rummel, J. R., *Dimensions of Conflict Behavior Within and Between Nations* (Mimeo). Northwestern University, June 1963. Tanter, R., "Dimensions of Conflict Behavior Within and Between Nations," *Journal of Conflict Resolution*, 10, 1966.



presence of "crisis within a non-governmental organization" is not very clear. This factor is a subdivision of Feierabend's Factor I.

- *Factor VI Execution:* The presence of political execution in a situation, which excludes forms of guerrilla warfare, suggests a political culture with a high level of violence among the political elite. Countries with high scores on this factor are Cuba, Iraq, China Albania, and Korea. Factors VI and VIII contribute to Feierabend's Factor III "power struggle".
- *Factor VII -Guerrilla:* Appears as a single dimension which is unrelated to other types of social tensions. It corresponds to Feierabend's Factor IX.
- *Factor VIII - Repression:* It indicates probably a policy of limitation of political participation by the government in a situation of low mobilization. It corresponds to Feierabend's Factor VII.
- *Factor IX -Elections:* It is not a conflict or instability dimension and is independent from other items. It corresponds to Feierabend's Factor V.

It is possible to define each factor in terms of level of mass participation, mass organization, stability of the political system, and violence. Mass participation refers to the amount of involvement of large sectors of the population and, thus, corresponds to the concept of "mobilization". Mass organization accounts for situations where mobilization is organized having a leadership a minimum of explicit goals and a certain stability of norms of action. Governmental stability is a self-explanatory concept. "Normal" change of government does not mean lack of stability. Violence is also self-explanatory. The relationship between the factors and these concepts are summarized in the following table:

	<b>Mass participation</b>	<b>Mass organization</b>	<b>Government stability</b>	<b>Violence</b>
I - Riots	High	Low	(?)	High
II - Coup d'État	low	low	very low	high
III - Change of Government	(?)	(?)	moderate	moderate
IV - Protests	moderate	moderate	high	low
V - Organized Conflict	very high	very high	high	moderate
VI - Execution	low	low	low	very high
VII - Guerrilla	high	high	low	high
VIII - Repression	low	low	high	high
IX - Elections	moderate	moderate	high	low

These relationships are hypothetical approximations but they may be useful for a better understanding of the data.

## Structural Determinants of Social Tensions

The next step in the analysis consists of relating measures of structural tensions to the scores the countries have on each of our factors. It includes the following operations:

*The operationalization of structural tensions.* We tried to obtain the following data for each of the 84 countries in the Feierabend's list, for 1960 or the closest possible year:

1) *Indicators of modernization:*

- a. Literacy (% of literate population. B. Russett, 1964).
- b. Higher education (population in post-primary schools as % of primary school age population. Harbison and Myers, 1964)
- c. Urbanization: (% of population in cities over 20,000 inhabitants. Russett, 1964).
- d. Opening of the social structure (professionals, technicians, etc., executives, managers and directors, white-collar employees, as % of total of economically active population.(ILO, 1965, Table 2b).

2) *Indicators of development:*

- a. Income per capita, US dollars, 1957 (Russett, 1964).
- b. Energy consumption per capita (UN, 1964).

The data were submitted to "z" transformations with the average equal to zero and the standard deviation equal to 1<sup>35</sup>. The values of the indicators of development were subtracted from those of modernization in order to obtain the following measures of structural tension:

Modernization	Development	Modernization	Development
T1: "Higher Education"	Income	T5: Social Structure	Income
T2: "Higher Education"	Energy	T6: Social Structure	Energy
T3: Literacy	Income	T7 Urbanization	Income
T4: Literacy	Energy	T8: Urbanization	Energy

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<sup>35</sup> "Z" scores are calculated according to the formula:  $z = (X - \bar{X}) / \text{sdv}$ , where X stands for the values of the variables, for the mean, and sdv for the standard deviation. After the transformation, the mean is equal to zero and the standard deviation is equal to one. One of the objectives of the standardization is to make possible the comparison between otherwise heterogeneous data. Of course, this type of transformation has a specific theoretical implication -namely, that there is a theoretical equivalence between the data being compared when they are equidistant from the average in terms of standard deviations. To work with "0-100" transformations implies equivalences at the extremes. Since we have no strong criteria for decision and since the "0-100" transformations are particularly sensitive to extreme values, we decided in favor of "z" scores. "z" scores lead to the disappearance of the coefficient of variability, the ratio between the average and the standard deviation. With non-standardized data it is always possible to examine whether the dispersion of a variable is wide enough - if the variable "discriminates". The standardization can lead to variations which are the result of statistical manipulations without much theoretical meaning.

Each index of tension was divided into three levels (high = above 0.30; medium = between 0.30 and -0.30; low -below -0.30); the low levels are understood as "excess" of development over modernization. The average factor scores of the countries in each group were calculated for each factor provided by the orthogonal and principal components solutions. Since the scores are also given in "z" values, their average is zero and the standard deviation one. In order to avoid distortions due to very high scores of a few countries, those with scores above three (three standard deviations) were reduced to the level of three.

The calculations were made controlling for two levels of income, energy consumption and social structure. In all cases, the cutting point was the average, i.e. zero.

## Findings

Since the reliability of our data<sup>36</sup> is limited, income and energy consumption are considered as equivalent indicators of development, and only results that are valid for both (i.e. for T1 and T2, T3 and T4, and so on) are reported. Furthermore, only differences above 0.5 standard deviations are considered as significant<sup>37</sup>.

### *A: General Instability Factor: Principal Components Solution*

The principal components solution yielded a general factor of turmoil explaining 35% of the common variance, a factor that does not appear in the varimax solution. This factor of "turmoil" is strongly and positively associated with T7 and T8 among the countries with low income. This tension is not related to any of the more "pure" dimensions derived from the varimax rotation<sup>38</sup>:

Average values of Factor I (Turmoil)			
T7	Income		
	Low	High	Total
Low	-0,33 (18)	-0,20 (11)	-0,28 (29)
Medium	0.33 (19)	-0,35 (6)	0.17 (25)
High	0.60 (15)	-0,32 (12)	0.09 (27)

<sup>36</sup> See Russett, Bruce M., et al., *World Handbook of Political and Social Indicators*. Yale University Press 1964, for a discussion of the reliability of cross-national aggregate data. The problems concerning conflict measures are still more serious.

<sup>37</sup> These are arbitrary standards, but they are well beyond what the tradition in the field accepts as reasonable.

<sup>38</sup> See also Hernandez, R.A., and Heintz, P., *Factor Analysis of the Departments of Tucumán*.

Factor II, "palace revolutions", is common to both solutions, and in both cases it is associated with low income and low tensions regarding education and urbanization. Countries with an excess of education and high income are 0.71 standard deviations below the average.

Factor III, "organized conflict", is strongly associated with excess of "higher education", mainly among countries of high income (average factor scores go from 0.22 to 0.92, from low to high values of T1).

Factor IV, "repression", follows the same pattern, especially among the low-income countries<sup>39</sup>

Average Values of Factor IV (Repression)			
T1	Income		
	Low	High	Total
Low	-0.49 (13)	0.16 (10)	-0.35 (23)
Medium	0.53 (15)	0.05 (8)	0.33 (23)
High	0.71 (4)	0.56 (6)	0.62 (10)

Factor VI is a continuum that has guerrilla warfare at one extreme (loading 0.48) and the organization of opposition parties at the other (-.40). Countries with large middle and high sectors where economic development in terms of energy consumption is higher than social development in terms of social structure, i.e. highly developed nations, have the lowest values. The difference of averages in Factor VI among low and high values of T6 is 1.17.

#### *B. The Effect of Development (varimax solution)*

The well-known fact that development is a determinant of political stability is confirmed by our data. There is a difference of almost one standard deviation in Factor II, "coup d'État", between countries above and below the average level of per capita income (US\$451.10). More significant, however, is the fact that Factor V, "organized conflict", is positively associated with development. This, of course, confirms that "instability" covers several dimensions that have independent and often contradictory determinants<sup>40</sup>. The results are similar if our second indicator of development, i.e. energy consumption per capita, is used. In the following, the findings referring to per capita income also hold for energy consumption, unless otherwise stated.

#### Average Values of Factor Scores, for Levels of Income

<sup>39</sup> See also Archetti, E., and Heintz, P., *Anti-Status Quo Conflicts in Latin America, with reference to induced tensions*.

<sup>40</sup> See again Archetti, E., and Heintz, P., op. cit.: S/P as a source of conflict which has nothing to do with the development tension.

Factors:	Income		
	High	Low	Difference
I - Riots	-0.24	0.02	-0.26
II - Coup d'État	-0.45	0.26	-0.71
III - Change of Government	0.02	0.00	0.02
IV - Protests	-0.21	0.03	-0.24
V - Organized Conflict	0.36	-0.22	0.58
VI - Execution	-0.20	0.03	-0.23
VII - Guerrilla	-0.21	0.04	-0.25
VIII - Repression	-0.39	0.09	-0.48
IX - Elections	0.12	-0.12	0.24
(N)	(29)	(54)	

### *C. The Effect of "Higher Education" (T1 and T2)*

The most consistent effect of a discrepancy between "higher education" (secondary and above), in the sense of structural chances of upward mobility within the educational system, and development, is shown by Factors II, III and V. The finding that Factor II, "coup d'État", is a function of low levels of development, is specified in the following table:

Average Values of Factor II (Coup d'état)			
	Income		
T1	Low (N)	High (N)	Total (N)
Low	0.36 (13)	-0.35 (10)	0.06 (23)
Medium	0.30 (15)	-0.19 (8)	0.13 (23)
High	-0.78 (4)	-0.87 (6)	-0.83 (10)

Levels of income only affect Factor II if there is no excess of education over development.

A high level of T1 seems to prevent this kind of instability. It may be that the opening of the educational system effectively competes with the military system.

Average Values of Factor III (Change of Government)			
	Income		
T1	Low (N)	High (N)	Total (N)
Low	-0.33 (13)	-0.25 (10)	-0.29 (23)
Medium	0.61 (15)	-0.14 (8)	0.35 (23)
High	0.75 (4)	0.46 (6)	0.58 (10)

A high turnover in government seems to be a direct function of this type of tension and unrelated to the level of development. High in Factor II are mainly the Latin American countries, while the Arab countries, but also Italy, Greece and Finland are high in Factor III. An "excess" of "higher education" leads to a type of instability that is different from the mere succession of military coups. As the table below shows, the effect of T1 explains 1.40 standard deviations in governmental turnover for low levels of social structure.

Average Values of Factor III (Change of Government)		
	Social Structure	
T1	Low	High
Low	-0.51 (7)	-0.20 (16)
Medium	0.34 (13)	0.36 (10)
High	0.87 (3)	0.45 (7)

The effect of an "excess" of "higher education" on Factor V, i.e., organized conflict, is a function of whether we are dealing with rich or poor countries:

Average Values of Factor V (Organized Conflict)			
	Income		
T1	Low	High	Total
Low	0.07	0.00	0.04
Medium	-0.35	0.87	0.08
High	-0.76	0.42	-0.05

The conservative aspect of an "excess" of "higher education" is present among the low-income countries, but does not exist among the rich, where the educated group, supposedly outside of power, may be a factor of social confrontation. This may be interpreted in connection with the higher average levels of education of the developed countries.

In short, an "excess" of "higher education" over development places the educated group in the center of political life: in low income countries, a high governmental turnover is independent of other forms of instability; in high income countries, it is related to organized conflict; in both cases, praetorian militarism is excluded.

#### *D. The Effect of Literacy (T3 and T4)*

Literacy, when in excess over development, presumably produces frustrations resulting from the high level of economic aspirations that cannot be satisfied. This level of aspirations, as has often been suggested in the literature, is a function of the opening to the modern developed world. We accordingly expect that this type of structural tension will lead to intense manifestations of social tensions and instability.

Excess of literacy has a weak negative relationship with governmental turnover among low-income countries:

Average Values of Factor III (Change of Government)			
	Income		
T3	Low	High	Total
Low	0.33(23)	-0.06 (11)	0.20 (34)
Medium	-0.34 (9)	0.21 (4)	-0.17 (13)
High	-0.23 (22)	-0.05 (14)	-0.16 (36)

The association may be spurious. The same does not apply to Factor V:

Average Values of Factor V (Organized Conflict)			
	Income		
T3	Low	High	Total
Low	-0.55	0.02	-0.36
Medium	-0.02	0.64	0.18
High	0.03	0.54	0.23

An excess of literacy seems to be a necessary condition for organized conflict in low-income countries, and a sufficient condition in countries with high income. The meaning of this finding is quite obvious, both in the sense that a minimum level of education is required for participating in organized conflict and that people experience the frustration that an "excess" implies. In addition, the stability of government among low-income countries may be a response to organized conflict.

#### *E. The Effect of the Social Structure*

An excess of middle and high status jobs over economic development may mean an over-development of the tertiary sector of the economy in a context of low development. The effect of this kind of tension clearly appears in Factors II, III, V and IX.

Average Values of Factor II (Coup d'état)			
	Income		
T5	Low	High	Total
Low	0.73	-0.63	0.16
Medium	0.32	-0.20	0.18
High	-0.14	0.88	-0.41

The finding is similar to the one with respect to T1, i.e. "higher education": coups d'état seem to occur only if the relative size of middle and high strata is small. It is plausible that the mobility chances offered by the occupational structure can successfully compete with the mobility chances in the military structure. Again, as with T1, this does not mean that the political system is stable. T5 is consistently related to Factor III.



Average Values of Factor III (Change of Government)			
	Income		
T5	Low	High	Total
Low	-0.24 (11)	-0.18 (8)	-0.21 (19)
Medium	0.04 (16)	-0.07 (6)	0.01 (22)
High	0.32 (7)	0.34 (4)	0.33 (11)

However, with respect to Factor V, i.e. organized conflict, the findings do not coincide. Higher mobility chances within the educational system have a depressing effect on organized conflicts among low-income countries and the opposite effect among countries with high income. On the other hand, T5 shows a consistent, although less strong, positive association with organized conflict on both levels of income:

Average Values of Factor V (Organized Conflict)			
	Income		
T5	Low	High	Total
Low	-0.43	-0.23	-0.34
Medium	-0.18	0.24	0.06
High	0.07	0.16	0.10

This may be due to the fact that high T5 values represent a condition for organized class conflict.

Finally, an excess of upper and middle sectors is incompatible with the existence of a normally functioning electoral system:

Average Levels of Factor IX (Elections)			
	Income		
T5	Low	High	Total
Low	0.38	0.70	0.52

Medium	-0.08	-0.07	-0.08
High	-0.32	0.00	-0.20

#### *F. The Effect of Urbanization*

Although strongly related to a general factor of turmoil, urbanization does not seem to be consistently connected with any of our orthogonal factors. Factor I, riots, has its higher value (0.42) among low-income countries with little urbanization (N = 10)<sup>41</sup>.

### **Conclusions**

"Political instability" is a multidimensional concept with a plurality of determinants. Measures of structural tensions, gross and debatable as they are, are much more powerful predictors of political unrest than the simple measures of development and modernization.

We may try to summarize our findings in a table. Our nine factors of the orthogonal rotation can be reduced to mass participation, organized conflict (mass organization), and government instability as different from the instability of the political system.

	Mass Participation	Mass Organization	Instability of	
			System	Government
Tension with respect to "higher education"		negative effect for low-income countries; positive effect for high-income countries	negative	positive
Tension with respect to literacy		positive effect		negative
Tension with respect to social structure		positive effect	negative for low-income countries	positive
Tension with respect to urbanization	positive for low-income countries			
Effect of income	negative	positive	negative	

Rank and Disequilibrium Tensions Producing Social (Anomic) Tensions		
Conflicts	Mass Participation	Mass Organization

<sup>41</sup> Herzog, R., Orban, B., Ries, H., et al., "Cultural Heterogeneity and Sectionalism as Determinants of the Slowing down of Urbanization Processes and the Emergence of Anomic-Ad hoc Groups," *Bulletin* 3, 1967, pp. 25-48.

Rank tension (underdevelopment)	x	
U-I with high rank tension	x	
ES-I		x
E-I		x
Accessibility of higher education - I with low rank tension		x

Rank and Disequilibrium Tensions absorbing Social (Anomic) Tensions		
Conflicts	Mass Participation	Mass Organization
Rank tension (underdevelopment)		x
Accessibility of higher education -I with low rank tension		x

A rational policy of underdeveloped countries with the aim of preventing mass organized conflicts would tend:

- a) To conserve low levels of development;
- b) To increase the mobility chances within the differentiated educational system
- c) To maintain mass education at a low level.
- d) To maintain the occupational structure at a low level.

This means that modernization is restricted to the expansion of higher education.

On the other hand, a rational policy of underdeveloped countries aimed at preventing mass participation conflicts would tend:

- a) To maintain urbanization at a low level, and
- b) To develop the country. The effect of development seems to be much less comprehensive than the effect of U-I.

Since development has contradictory effects on anti-status quo conflicts, a rational policy with the aim of preventing mass participation and mass organized conflicts would be conservative. The partial modernization through the expansion of higher education could be interpreted as increasing the legitimacy of an existing social structure. These conclusions are similar to those reached by R. Kautzman and by E. Archetti and P. Heintz<sup>42</sup>. A rational policy of high-income countries aimed at preventing mass participation and mass organized conflicts would be similar with respect to maintaining ES-I at a low level. However,

<sup>42</sup> See Kautzman, R., *Dependency and the Absorption of Social Tensions in Latin American Nations*; Archetti, E., and Heintz, P., *Anti-Status Quo Conflicts in Latin America*; and Heintz, P., *Ein Soziologisches Paradigma der Entwicklung mit besonderer Berücksichtigung Lateinamerikas*, Stuttgart 1969.

since literacy has reached saturation such a policy would tend to develop the country with respect to T3. It may do the same with respect to ES-I, although increasing levels of development are positively associated with mass organized conflicts. In addition, such a policy is not affected by the lead of urbanization. Finally, and contrary to the underdeveloped countries, it would prevent the expansion of higher education. This last point may be related to student revolts in developed countries.

Development along consumatory lines does, indeed, produce tensions that put the political system under stress. Development along urbanization leads to mass participation, turmoil, to a low level of mass organization, and general political instability. Development along the lines of mass education (literacy) leads to another type of instability, with more mass organization. These two forms of development correspond to an increase in the participation of the lower strata. If modernization mainly occurs in the middle and high strata of the society, either through education or through a relatively great proliferation of middle and high status jobs, governmental turnover increases. Instability, in this case, seems to be rather a "family affair" among the elite.

The most serious problem affecting our findings refers to the quality of the data on political instability. *The New York Times Index* is obviously a biased source as to news about the Southern Hemisphere -the criteria of relevance are not the criteria of the source of the news but the criteria of New York, and this problem is bound to get worse the farther away the source of the news is located.

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## Annex – Factor Matrices

Principal Components									
	Factor Loadings								
<i>Factor I:</i>	I	II	III	IV	V	VI	VII	VIII	IX
Repressive Action against Specific Groups	0.75	0.22	-0.07	-0.08	-0.23	0.03	-0.1	-0.02	-0.04
Macro Riots	0.71	-0.24	-0.16	-0.16	0.21	0.03	-0.08	0.04	0.12
Micro Demonstrations	0.69	-0.26	-0.16	-0.11	-0.2	-0.3	0.3	-0.06	0.01
significant Change of laws	0.69	0.15	0.21	0.08	0.13	-0.29	-0.05	0.06	-0.01
Terrorism and Sabotage	0.68	-0.13	0.19	-0.06	-0.22	0.32	0.1	0.02	-0.04
Macro-Demonstrations	0.64	-0.46	-0.27	0.08	0.08	-0.02	-0.04	-0.06	-0.07
Mass arrests of insignificant persons	0.6	0.06	-0.38	-0.07	0.23	0.16	-0.14	-0.17	0.06
Vacation of Office	0.59	0.14	0.39	0.53	0.17	0.02	-0.07	-0.06	-0.12
General Strikes	0.55	-0.37	0.36	-0.02	-0.23	0.07	-0.15	-0.19	0.28
Assassination	0.54	0.25	0.04	-0.08	-0.03	0.07	0.23	0.13	-0.29
Arrests of Significant Persons	0.53	0.51	0.1	0.17	-0.16	-0.02	-0.36	0.1	-0.03
Micro Riots	0.51	-0.17	-0.34	-0.12	0.5	0.1	0.05	0.15	-0.01
Severe Macro riots	0.51	-0.35	-0.24	-0.01	0.46	0.24	-0.06	0.03	-0.07
Arrests of Few insignificant Persons	0.52	-0.15	-0.17	-0.01	-0.33	-0.25	0.39	-0.14	-0.19
Acquisition of Office	0.51	0.23	0.41	0.5	0.12	0.05	0.07	-0.14	-0.22
<i>Factor II:</i>									
Revolts	0.42	0.5	-0.01	-0.46	-0.07	0.14	0.02	0.04	0.08
Civil War	0.2	0.48	0.07	-0.02	0.08	0.05	0.38	0.14	0.36
Coups d'état	0.33	0.46	0.12	-0.38	0.07	-0.31	-0.2	-0.15	0.1
Execution of Significant Persons	0.09	0.43	-0.28	0.29	0.02	0.09	0.1	-0.17	0.1
Micro Strikes	0.41	-0.42	0.04	-0.07	-0.27	0.21	0	-0.16	-0.09
<i>Factor III:</i>									
Macro-strikes	0.11	-0.41	0.44	-0.03	0.12	-0.03	-0.04	-0.14	0.07
Imprisonment of Insignificant Persons	0.22	-0.24	-0.4	15	-0.32	-0.12	-0.04	0.12	0.08
<i>Factor IV:</i>									
Execution of Insignificant Persons	0.16	0.4	-15	0.42	0.08	0.12	0.23	-0.19	0.29
Imprisonment of Significant Persons	0.14	0.21	-0.24	0.41	-0.06	-0.26	-0.19	0.23	-0.03
<i>Factor VI</i>									
Guerilla Warfare	0.27	0.24	20	-0.15	-0.23	0.48	0.06	0.33	-0.08
Organization of Opposition Party	0.3	-0.17	0.03	0.02	0.03	-0.4	0.06	0.3	-0.05
<i>Other Items:</i>									
Crisis Within a Non-governmental Organization	0.35	-0.23	-0.03	0.19	-0.36	0.08	-0.25	0.19	0.3
Exile	0.1	0.26	-0.13	-0.16	-0.1	-0.13	-0.06	-0.11	-0.13
% of Total Communality Accounted by Factor	35%	15%	10%	9%	7%	6%	5%	4%	4%

Varimax Factor Patterns									
	Factor Loadings								
	I	II	III	IV	V	VI	VII	VIII	IX
<i>Factor I:</i>									
Severe Macro Riots	0.83	-0.09	0.13	0.04	0.07	-0.06	0.04	-0.04	0.03
Micro Riots	0.81	0.06	0	0.09	-0.1	0.05	0.08	0.04	0.17
Macro Riots	0.68	0.22	0.06	0.22	0.28	-0.03	0.08	0.04	0.19
Mass arrests of insignificant persons	0.66	0.3	0.07	0.09	0.15	0.23	0.03	0.07	-0.15
Macro Demonstrations	0.64	-0.05	0.14	0.41	0.28	-0.11	-0.08	0.13	0
<i>Factor II:</i>									
Coups d'état	0	0.82	0.07	-0.01	0.03	0.08	0.08	0.07	0.08
Martial Law	0.13	0.69	0.12	0.07	-0.02	-0.05	0.15	0	0.15
Revolts	0.12	0.62	-0.09	0.03	0.03	0.2	-0.46	-0.08	0.01
Repressive Actions against specific Groups	0.26	0.48	0.22	0.31	0.3	0.11	0.32	0.21	-0.07
<i>Factor III:</i>									
Acquisition of Office	0.05	0.07	0.87	0.09	0.06	0.18	0.13	0.02	0.08
Vacation of Office	0.15	0.07	0.85	0.02	0.18	0.14	0.08	0.14	0.17
significant Change of Laws	0.24	0.41	0.45	0.21	0.11	0.02	0.05	0.18	0.36
<i>Factor IV:</i>									
Arrests of Few insignificant Persons	0.1	0.11	0.08	0.79	0.11	0.06	0.04	0.05	0.01
Micro Demonstrations	0.31	0.19	0.03	0.76	0.23	0	0.02	0.06	0.19
<i>Factor V:</i>									
General strikes	0.13	0.1	0.23	0.2	0.75	-0.13	0.03	-0.16	0.19
Crisis within a Non-governmental Organization	0.09	-0.09	-0.01	0.09	0.6	0	0.12	0.35	0.09
Micro Strikes	23%	-8%	10%	35%	44%	-21%	15%	-15%	-15%
<i>Factor VI</i>									
Execution of Insignificant Persons	0.06	-0.01	0.17	0.02	-0.01	0.75	-0.03	0.1	-0.07
Execution of significant Persons	0.03	0.08	0.12	0	-0.1	0.56	0	0.15	-0.21
Civil War	-0.05	0.21	-0.01	0.02	-0.09	0.56	0.28	-0.06	0.35
<i>Factor VII:</i>									
Guerrilla Warfare	-0.01	0.08	0.08	-0.06	0.12	0.02	0.76	-0.02	-0.01
Terrorism and sabotage	0.27	0.09	0.28	0.31	0.43	-0.03	0.48	-0.11	0.04
<i>Factor VIII:</i>									
imprisonment of significant Persons	0	0.04	0.15	0.02	-0.06	0.14	-0.09	0.63	0.01
Arrest of significant Persons	0.1	0.47	0.3	-0.05	0.17	0.21	0.26	0.5	-0.14
Imprisonment of Insignificant Persons	0.13	-0.18	-0.12	0.35	0.25	0.05	0.07	0.45	-0.08
<i>Factor IX:</i>									
Elections	0.11	0	0.24	0.02	0.16	-0.09	0.02	-0.12	0.68
Organization of Opposition Party	0.12	0.06	0.07	0.29	-0.03	-0.21	-0.04	0.26	0.4
<i>Other Items:</i>									
Exile	-0.03	0.35	-0.02	0.11	-0.1	0.02	0.01	0.08	-0.17
Proportion of total communality accounted for by factor	16%	0.14	0.12	0.11	0.1	0.08	0.08	0.07	0.07